

AMENDMENTS

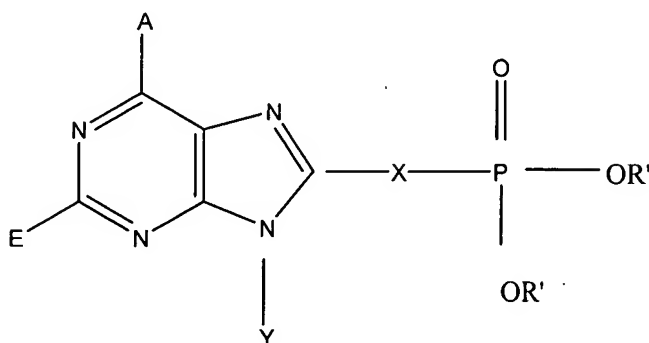
In the Specification:

Please amend the specification as follows:

at p. 122

ABSTRACT

Novel purine compounds of Formula 1, pharmaceutically acceptable prodrugs and salts thereof, ~~the following structure and~~ their use as fructose 1,6-bisphosphatase inhibitors is described.



Formula 1

wherein

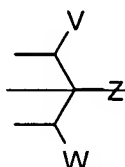
~~— A is selected from the group consisting of NR^8_2 , NHSO_2R^3 , OR^5 , SR^5 , halo, lower alkyl, $\text{CON}(\text{R}^3)_2$, guanidino, amidino, H, and perhaloalkyl;~~

~~— E is selected from the group consisting of H, halo, lower alkylthio, lower perhaloalkyl, lower alkyl, lower alkenyl, lower alkynyl, lower alkoxy, CN, and NR^7_2 ;~~

~~— X is selected from the group consisting of alk-NR, alkylene, alkenylene, alkynylene, arylene, heteroarylene, alk-NR-alk, alk-O-alk, alk-S-alk, alk-S, alicyclicene, heteroaicyclicene, 1,1-dihaloalkylene, $\text{C}(\text{O})$ -alk, $\text{NR}-\text{C}(\text{O})-\text{NR}'$, $\text{alk-NR}-\text{C}(\text{O})$, $\text{alk}-\text{C}(\text{O})-\text{NR}$, Ar-alk , and alk-Ar , all optionally substituted, wherein each R and R' is independently selected from H and lower alkyl, and wherein each "alk" and "Ar" is an independently selected alkylene or arylene, respectively;~~

— Y is selected from the group consisting of H, alkyl, alkenyl, alkynyl, aryl, alicyclic, heteroalicyclic, aralkyl, aryloxyalkyl, alkoxyalkyl, $C(O)R^3$, $S(O)_2R^3$, $C(O)OR^3$, $CONHR^3$, NR^2_2 , and OR^3 , all except H are optionally substituted;

— R^1 is independently selected from the group consisting of H, alkyl, aryl, heteroalicyclic where the cyclic moiety contains a carbonate or thiocarbonate, $C(R^2)_2$ -aryl, alk-aryl, $C(R^2)_2OC(O)NR^2_2$, $NR^2-C(O)R^3$, $C(R^2)_2OC(O)R^3$, $C(R^2)_2OC(O)OR^3$, $C(R^2)_2OC(O)SR^3$, alk-S-C(O)R³, alk-S-S-alkylhydroxy, and alk-S-S-S-alkylhydroxy, or together R^1 and R^1 are alk-S-S-alk to form a cyclic group, wherein each "alk" is an independently selected alkylene, or together R^1 and R^1 are



— wherein

— V and W are independently selected from the group consisting of hydrogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, 1-alkenyl, 1-alkynyl, and R^9 ; or

— together V and Z are connected via a chain of 3-5 atoms, only one of which can be a heteroatom, to form part of a cyclic group substituted with hydroxy, acyloxy, alkoxy, alkoxy, or aryloxy, attached to a carbon atom that is three atoms from an oxygen attached to the phosphorus; or

— together V and W are connected via a chain of 3 carbon atoms to form part of a cyclic group substituted with hydroxy, acyloxy, alkoxy, alkoxy, alkylthiocarboxy, hydroxymethyl, or aryloxy, attached to a carbon atom that is three atoms from an oxygen attached to the phosphorus;

— Z is selected from the group consisting of CH_2OH , CH_2OCOR^3 , $CH_2OC(O)SR^3$, $CH_2OCO_2R^3$, SR^3 , $S(O)R^3$, CH_2N_3 , $CH_2NR^2_2$, CH_2Ar , $CH(Ar)OH$, $CH(CH=CR^2)OH$, $CH(C\equiv CR^2)OH$, and R^2 ;

~~with the provisos that:~~

~~a) V, Z, W are not all H; and~~

~~b) when Z is R^2 , then at least one of V and W is not H or R^9 ;~~

~~R^2 is selected from the group consisting of R^3 and H;~~

~~R^3 is selected from the group consisting of alkyl, aryl, alicyclic, heteroalicyclic, and aralkyl;~~

~~R^4 is independently selected from the group consisting of H, lower alkyl, lower alicyclic, lower heteroalicyclic, lower aralkyl, and lower aryl;~~

~~R^5 is selected from the group consisting of lower alkyl, lower aryl, lower aralkyl, lower alicyclic, and lower heteroalicyclic;~~

~~R^6 is independently selected from the group consisting of H, and lower alkyl;~~

~~R^7 is independently selected from the group consisting of H, lower alkyl, lower alicyclic, lower heteroalicyclic, lower aralkyl, lower aryl, and $C(O)R^{10}$;~~

~~R^8 is independently selected from the group consisting of H, lower alkyl, lower aralkyl, lower aryl, lower alicyclic, $C(O)R^{10}$, or together said R^8 groups form a bidendate alkylene;~~

~~R^9 is selected from the group consisting of alkyl, aralkyl, alicyclic, and heteroalicyclic;~~

~~R^{10} is selected from the group consisting of H, lower alkyl, NH_2 , lower aryl, and lower perhaloalkyl;~~

~~R^{11} is selected from the group consisting of alkyl, aryl, OH, NH_2 and OR^3 ; and pharmaceutically acceptable prodrugs and salts thereof.~~